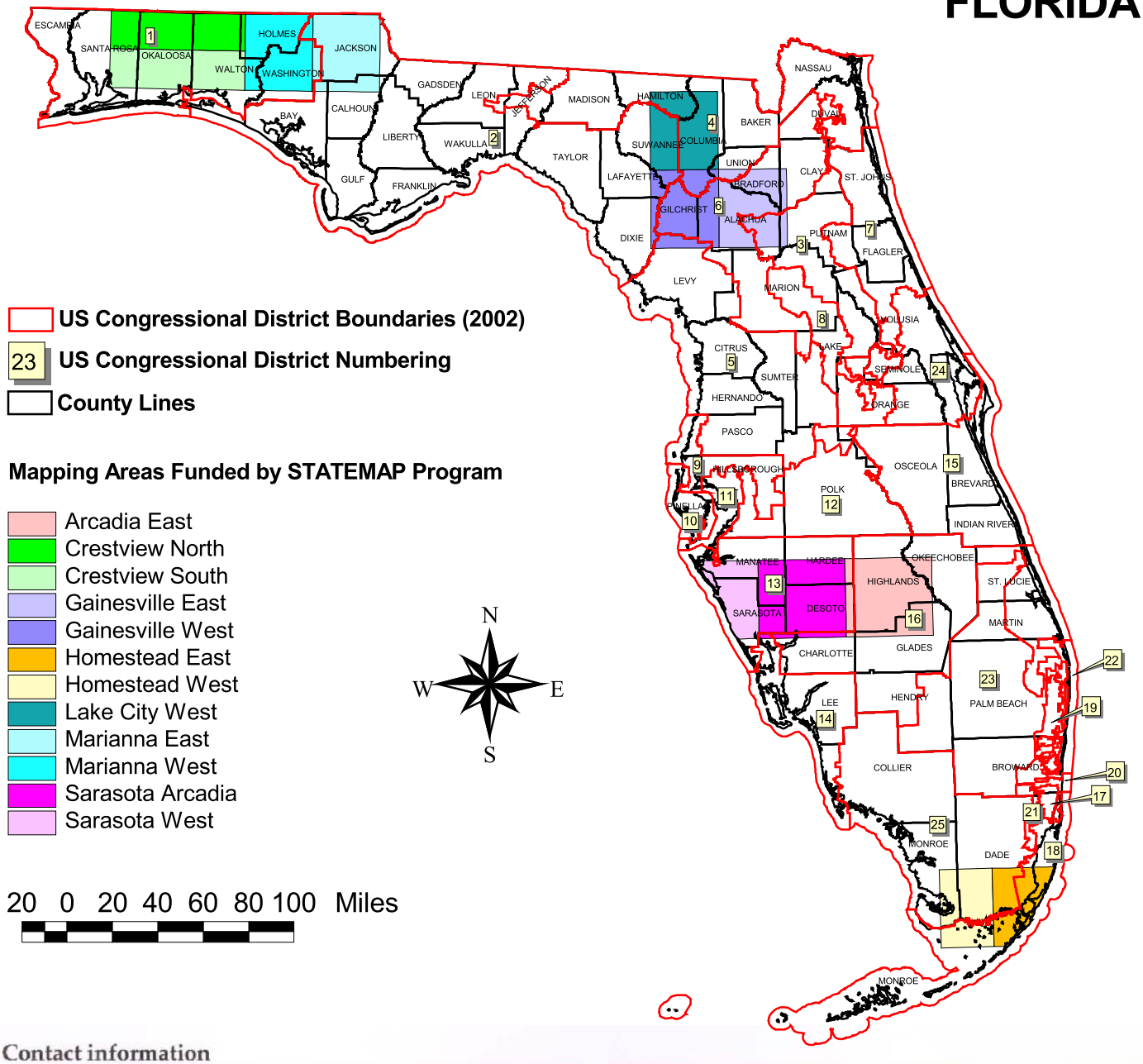
ASSOCIATION OF AMERICAN STATE GEOLOGISTS in cooperation with UNITED STATES GEOLOGICAL SURVEY

USGS science for a changing world

National Cooperative Geologic Mapping Program

FLORIDA



US Congressional District Boundaries (2002)

23 **US Congressional District Numbering**

County Lines

Mapping Areas Funded by STATEMAP Program

- Arcadia East
- Crestview North
- Crestview South
- Gainesville East
- Gainesville West
- Homestead East
- Homestead West
- Lake City West
- Marianna East
- Marianna West
- Sarasota Arcadia
- Sarasota West

N W E S

20 0 20 40 60 80 100 Miles

Contact information

Florida Geological Survey
Chief and State Geologist:
Walt Schmidt (850/488-9380)

STATEMAP Contact:
Rick Green 850-488-9380
http://www.dep.state.fl.us/geology/

U.S.G.S. Geologic Mapping Program Office
Program Coordinator:
Peter T. Lyttle (703/648-6943)
Associate Program Coordinators:
Randall C. Orndorff (703/648-4316)
Laurel M. Bybell (703/648-5281)

http://ncgmp.usgs.gov

STATUS OF STATEMAP GEOLOGIC MAPPING IN FLORIDA

Federal FY	Project Title and Scale	Federal Dollars	State Dollars	Total Project Dollars
1994	Geologic map of the eastern portion of the USGS 1:100,000 scale Homestead quadrangle	$30,000	$30,000	$60,000
1995	Geologic map of the western portion of the USGS 1:100,000 scale Homestead quadrangle	$30,000	$30,000	$60,000
1996	Geologic map of the western portion of the USGS 1:100,000 scale Sarasota quadrangle	$70,000	$70,000	$140,000
1997	Geologic map of the eastern portion of the USGS 1:100,000 scale Sarasota quadrangle and the western portion of the 1:100,000 scale Arcadia quadrangle	$95,547	$95,547	$191,094
1998	Geologic map of the eastern portion of the USGS 1:100,000 scale Arcadia quadrangle	$104,414	$104,414	$208,828
1999	Geologic map of the northern portion of the USGS 1:100,000 scale Crestview quadrangle	$105,000	$105,000	$210,000
2000	Geologic map of the southern portion of the USGS 1:100,000 scale Crestview quadrangle	$106,021	$106,021	$212,042
2001	Geologic map of the western portion of the USGS 1:100,000 scale Marianna quadrangle	$120,990	$120,990	$241,980
2002	Geologic map of the eastern portion of the USGS 1:100,000 scale Marianna quadrangle	$134,606	$134,606	$269,212
2003	Geologic map of the western portion of the USGS 1:100,000 scale Gainesville quadrangle	$125,761	$125,761	$251,522
2004	Geologic map of the eastern portion of the USGS 1:100,000 scale Gainesville quadrangle	$119,027	$119,027	$238,054
2005	Geologic map of the western portion of the USGS 1:100,000 scale Lake City quadrangle	$108,780	$108,780	$217,560
	TOTALS	**$1,115,146**	**$1,115,146**	**$2,300,292**

The Florida Geological Survey (FGS) receives federal funding from the STATEMAP Program, a component of the National Cooperative Geologic Mapping Program, for the purpose of conducting detailed geologic mapping. Currently, the FGS is mapping the eastern portion of the Gainesville 1:100,000 quadrangle under an award from the 2004-2005 STATEMAP program. For the 2005-2006 STATEMAP project, the FGS has been funded to map the western portion of the Lake City 1:100,000 scale quadrangle. The Lake City quadrangle includes some of the most environmentally sensitive areas in the state. The presence of numerous springs and swallets in the Lake City area allow for direct infiltration of surface water into the Floridan Aquifer System, the source for several first magnitude springs in the area. A better understanding of the geology of the area is critical if we are to protect these vital natural resources.

The Columbia County Commission recently sought to expand its urban development area into rural areas to accommodate growth in the Lake City area. The Florida Geological Survey was asked by the Florida Department of Community Affairs (DCA), the state land planning agency, to provide geologic expertise and maps in order to determine if the areas around the city were environmentally suitable for increased urban development. The Comprehensive Growth Management Plan allows a housing density of one unit per five acres, where the outlying areas utilize on-site septic systems for wastewater treatment. Pressure from development is pushing Columbia County to examine the possibility of expanding its urban development area past its current boundaries.

The primary drinking water aquifer, the Floridan Aquifer System, is highly vulnerable to infiltration by polluted surface-water runoff in parts of the county due to the presence of karst, mainly sinkholes and “swallets” (stream-to-sink features). The Lake City area also falls within the springshed of a first magnitude spring, Ichetucknee Springs, which provides a large benefit to the local economy from tourists. Water quality has been declining in the Ichetucknee Springs system steadily and may be even more negatively impacted if urbanization continues south of Lake City.

The use of detailed geologic maps was helpful in determining the areas where increased development would pose a potential threat to the aquifer system. The Florida Geological Survey was asked to put together a map of the swallets and their drainage basins, the geology, and the geomorphology of the area so that the Columbia County Commission and the DCA could use it as a tool in making their decisions on future growth management in the region. Recent geologic maps produced for STATEMAP program projects in the area have contributed to the understanding of the hydrogeologic characteristics of the Floridan Aquifer System in this geologically complex area. Local counties and land planning agencies continue to utilize these products to support their needs for a better understanding of the geology and hydrogeology of the area.